

Growth Parameters as a Function of Sex Prediction in *Telfairia occidentalis* in Southern Nigeria

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ABSTRACT

The study on the growth performance as a function of sex determination was carried out in Delta State Polytechnic Ozoro between March - September 2005. There are two sexes of *Telfairia* which could be identified on the field. The need to identify *Telfairia* sexes at seeding necessitated this study. The seeds were separated into male and female using some predictive features like size and shape of the seeds. The identified males are large and flat while the female are small and oval in shape. These seeds were planted into Complete Randomized Design with three replications. The performances of the two identified sexes were accessed using growth parameters like seedling emergence, number of leaves, number of branches and plant height. Data was collected on the interval of two weeks. The results indicated that the identified male had better seedling emergence of 148 and 203 as against 110 and 175 for the female. However, the female had more number of branches of 12, 21:33, 31.33 and 31:67 as against 8.33, 12.00, 14.00 and 18.67 for the male. The number of leaves followed the same trend of the female having more leaves of 130.00, 156.00, 412.20 and 429.70 as against 108.00, 115.33, 323.40 and 338.40 for the male. For the plant height, the female had 179.60, 194.33, 250.00 and 259.67 as against 175.66, 176.66, 200.00 and 244.33. Conclusively, predicted female perform better than the male in terms of number of branches, leaves and plant height. It is therefore recommended that *Telfairia* farmers should use size and shape to identify *Telfairia* sexes at seeding so as to boost productivity.

Keywords: *Telfairia*, Female, Male, Sexes, Shape and Size.

INTRODUCTION

Telfairia occidentalis commonly known as fluted pumpkin (ugu) originated from East and West Africa (Tindall, 1986). It belongs to the family cucurbitaceae (Ndukwu *et al.*, 2005). It is generally used in Southern Nigeria as seed and leaf vegetable. It produces large fruits and the seed are boiled and eaten locally. The seeds can also be used in preparation of soup or used in the production of oil (Omoruyi, 1999). Usually, ogiri ugu, a local condiment obtained from *Telfairia*

is also a substitute for a more preferred ogiri ugba from castor oil bean seeds (Oyolu, 1978).

Telfairia is a diaecious plant that has the male and the female on separate plant. The female had been reported to have better vigor than the male (Akoroda and Adejoro, 1989). Akoroda (1990) also reported that female *Telfairian* has strong production ability. Akoroda (1990) reported that there were differences between the male and female vine length of *Telfairia*. The male *Telfairia* had earlier flowering period and continue to flower even when the female had stopped (Emebiri and Nwifo, 2005). Check in the case of the female yield, the bigger the seeds, the better the seedling emergence as this affects the food reserves which are basic resource of rapid emergence (Asiegbu, 1982). There are two sexes of *Telfairia* which can only be identified on field. The need therefore to identify the *Telfairia* sex at seedling necessitated the study.

Material and Methods

This project was carried out in Delta State Polytechnic, Ozoro between March – September 2005. Ozoro is in Isoko North Local Government Area of Delta State. The mean annual temperature of the area is between 28°C, and 30°C while the annual rainfall ranges between 2500mm to 3000mm. Its altitude position is 50 meters above sea level (Ofune, 1993). There is a bimodal rainfall pattern, with a long rainy season usually, between March and July, a short rainy season, usually extending from September to early November after a short dry spell in August and longer dry period from December to February. The soil was sandy loam with well drained soil; no soil test was carried out. The fruits of *Telfairia* obtained from the local market were split opened and the seeds were separated using some predictive features like size and shape of the seeds. The predictive males are large and flat while the predictive females are small and oval in shape. 285 and 351 of female and male respectively were planted into a Complete Randomized Design with three replications at a planting depth of 5cm and planting distance 1m x 1m. Two seeds were planted per hole.

The growth parameters measured were seedling emergence, number of branches of leaves/number and plant height. Data was collected at the interval of two weeks. Data collected were subjected to the analysis of variance.

Results

Table (1) revealed the seedling emergence from 2-3 weeks after planting. At two weeks after planting the predicted male had seedling emergence of 148 as against 110 for the predicted female. At week 3 the male had 203 as against 175 seedling emergence for the female. Number of branches table (2) shows that the female had more number of leaves of 12.67, 21.33, 31.33, 31.67 as against 8.33, 12.00, 14.00, and 18.67 for the predicted male. The mean number of leaves from week 5-11 also followed the same trend of the female having more number of 130, 156, 412.20, and 429.70 as against 108, 115.33, 323.40 and 338.40 for the male.

The mean plant height table (4) weeks after planting indicated that the female had better plant height of 179.60, 194.33cm, 250.00cm and 259.67cm as against the predicted male of 175.66cm, 176.00cm, 200cm and 244.33cm. However, there was significant different between the predicted male and female *Telfairia* in terms of number of leaves, number of branches and plant height at ($p < 0.05$).

Table 1: Seedling Emergence of predicted male and female *Telfairia occidentalis* at 2-3 Weeks After Planting

	Weeks	
Sexes	2	3
Male	148	203
Female	110	175

Table 2: Number of Branches of Predicted Male and Female *Telfairia* at 5-11 Weeks After Planning

	Weeks			
Sexes	5	7	9	10
Male	8.33	12.00	14.00	18.67
Female	12	21.33	31.33	31.67
LSD	5.74	15.97	21.22	24.00

Table 3: Mean Number of Leaves of Plant Predicted Male and Female *Telfairia* at 5-11 Weeks After Planting

Sexes	Weeks			
	5	7	9	11
Male	108.00	115.33	323.40	338.40
Female	130.00	156.00	412.20	429.70
LSD	34.31	53.51	91.35	91.35

Table 4: Plant Height (cm) of Predicted Male and Female *Telfairia* from 5-11 Weeks After Planting

Sexes	Weeks			
	5	7	9	11
Male	175.66	176.66	200.00	244.33
Female	179.60	194.33	250.00	259.67
LSD	1.43	86.95	175.17	149.92

DISCUSSIONS

Seedling emergence of the predicted sexes revealed that the male had better seedling emergence. This could be attributed to the size of the seeds. The finding agreed with (Asiegbu) 1982) who reported that bigger seeds had better seedling emergence due to the presence of food reserve in the in the endosperm. The predicted female had more number of branches throughout the period of the experiment and there was significant difference between the predicted male and female at ($p>0.05$) this result agreed with Akoroda and Adejoro (1986) who reported that the distribution of number of branches was significantly different between the two sexes. The result also agreed with Akoroda (1990) who state that the female *Telfairia* had better vigor than the male. The numbers of leaves are not left out. The predicted female had more number of leaves than the male. The result also agreed with Akoroda (1990) who reported that the male *Telfairia* usually exhibited poor leaf vigor. Akoroda and Adejoro (1989) stated that the female *Telfairia* are more important than the male because the female produces more leaves and also has fruiting ability. Ganiyu Oboh (2005) reported that female *Telfairia* produces more leaves than the male, the plant height of the female increased progressively as the weeks progresses. The predicted female had superior plant height than the male. The result agreed with (Ndukwu, *et al.*, 2005) who reported that the vine length of female *Telfairia* appeared to be longer and wider than those of the males. The result also agreed with Akoroda and Adejoro (1990) who state that there was significant different between the male and female vine length of *Telfairia*

occidentalis. It is therefore recommended that *Telfairia* farmers should use size and shape to identify *Telfairia* sexes at seeding so as to boost production.

Conclusion

The finding revealed that predicted female perform better in terms of number of branches, number of leaves and plant height. Since there was significant difference between the performance of predicted female and male *T. occidentalis*, it is therefore recommended that *Telfairia* farmers should use size and shape to identify *Telfairia* sexes at seeding so as to boost production.

Recommendation

Since there was significant difference between the performances of predicted female of male *occidentalis*, it is therefore recommended that *Telfairia* farmers should use size and shape to identify *Telfairia* sexes at seedling so as to boost production.

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